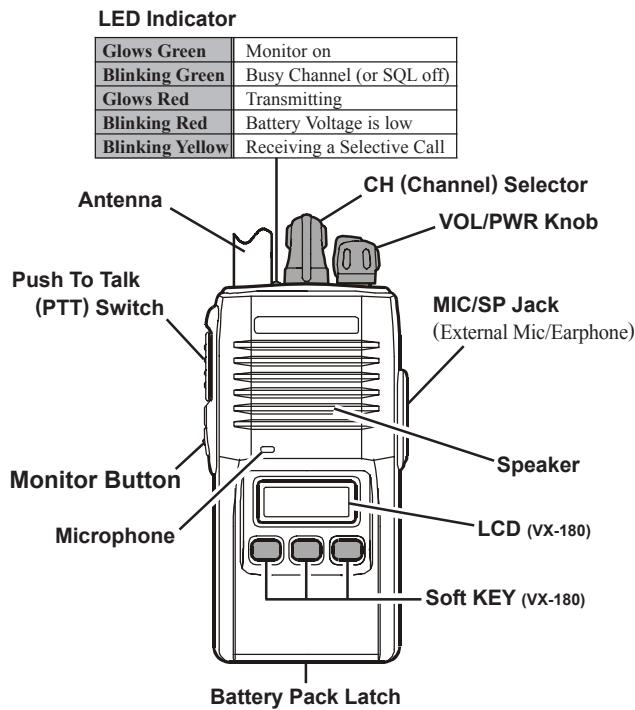


# VX-160/-180 Operating Manual

## Controls & Connectors



## Important Notice!

### FCC RF Exposure Compliance Requirements for Occupational Use Only:

This Radio has been tested and complies with the Federal Communications Commission (FCC) RF exposure limits for Occupational Use/Controlled exposure environment. In addition, it complies with the following Standards and Guidelines:

- FCC 96-326, Guidelines for Evaluating the Environmental Effects of Radio-Frequency Radiation.
- FCC OET Bulletin 65 Edition 97-01 (1997) Supplement C, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
- ANSI/IEEE C95.1-1992, IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
- ANSI/IEEE C95.3-1992, IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave.
- This radio is NOT approved for use by the general population in an uncontrolled environment. This radio is restricted to occupational use, work related operations only where the radio operator must have the knowledge to control its RF exposure conditions.
- When transmitting, hold the radio in a vertical position with its microphone 1 to 2 inches (2.5 to 5 cm) away from your mouth and keep the antenna at least 1 inch (2.5 cm) away from your head and body.
- The radio must be used with a maximum operating duty cycle not exceeding 50%, in typical Push-to-Talk (PTT) configurations. DO NOT transmit for more than 50% of total radio use time (50% duty cycle). Transmitting more than 50% of the time can cause FCC RF exposure compliance requirements to be exceeded.

The radio is transmitting when the red LED on the top of the radio is illuminated. You can cause the radio to transmit by pressing the PTT button.

- DO NOT transmit when the radio is used in Body Worn configuration with the following accessory: belt-clip (Parts # CP7064001). It must be used ONLY for (1) there is a 4 cm distance from the body during transmitting, (2) monitoring purposes, using the speaker only and (3) for carrying purposes.
- Always use Vertex Standard authorized accessories.

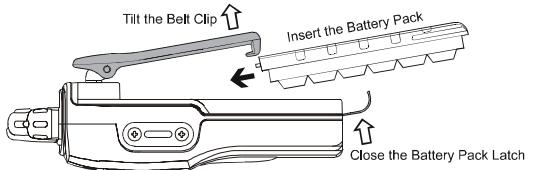
### Notice !

There are no owner-serviceable parts inside the transceiver. All service jobs must be referred to an authorized **vertex** Service Representative. Consult your Authorized **vertex** Dealer for installation of optional accessories.

## Before You Begin

### Battery Pack Installation and Removal

- To install the battery, hold the transceiver with your left hand, so your palm is over the speaker and your thumb is on the top of the belt clip. Insert the battery pack into the battery compartment on the back of the radio while tilting the Belt Clip outward, then close the Battery Pack Latch until it locks in place with a "Click."



- To remove the battery, turn the radio off and remove any protective cases. Open the Battery Pack latch on the bottom of the radio, then slide the battery downward and out from the radio while holding the Belt Clip.

**Caution!**  
*Do not attempt to open any of the rechargeable battery packs, as they could explode if accidentally short-circuited.*

### Low Battery Indication

- As the battery discharges during use, the voltage gradually becomes lower. When the battery voltage becomes too low, substitute a freshly charged battery and recharge the depleted pack. The TX/BUSY indicator on the top of the radio will blink red (on the VX-180, the "■" icon will appear on the LCD) when the battery voltage is low.
- Avoid recharging batteries often with little use between charges, as this can degrade the charge capacity. We recommend that you carry an extra, fully-charged pack with you so the operational battery may be used until depletion (this "deep cycling" technique promotes better long-term battery capacity).

## Operation

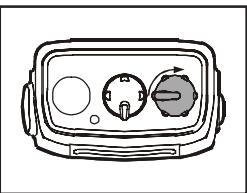
### Preliminary Steps

- Install a charged battery pack onto the transceiver, as described previously.
- Screw the supplied antenna onto the Antenna jack. Never attempt to operate this transceiver without an antenna connected.
- If you have a Speaker/Microphone, we recommend that it not be connected until you are familiar with the basic operation of the **VX-160/-180**.

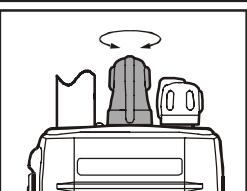


### Operation Quick Start

- Turn the top panel's **VOL/PWR** knob clockwise to turn on the radio.



- Turn the top panel's **CH** selector knob to choose the desired operating channel.



- Rotate the **VOL/PWR** knob to set the volume level. If no signal is present, press and hold in the **MONITOR** key (the lower button on the left side) for more than 1 seconds; background noise will now be heard, and you may use this to set the **VOL/PWR** knob for the desired audio level.



- Press and hold in the **MONITOR** key for more than 1 seconds (or press the **MONITOR** key twice) to quiet the noise and resume normal (quiet) monitoring.

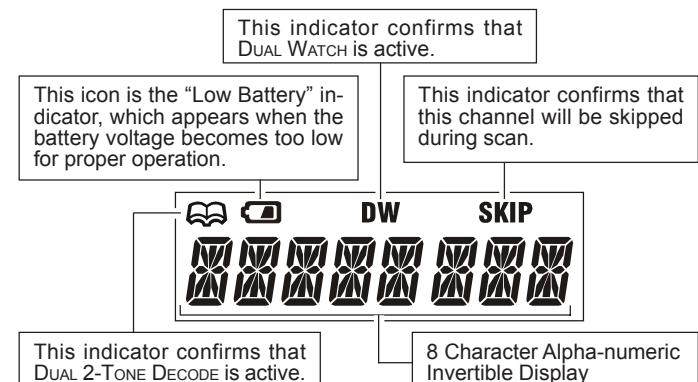


- To transmit, press and hold in the **PTT** switch. Speak into the microphone area of the front panel grille (lower left-hand corner) in a normal voice level. To return to the Receive mode, release the **PTT** switch.

- If a Speaker/Microphone is available, remove the plastic cap and its two mounting screws from the right side of the transceiver, then insert the plug from the Speaker/Microphone into the **MIC/SP** jack; secure the plug using the screws supplied with the Speaker/Microphone. Hold the speaker grille up next to your ear while receiving. To transmit, press the PTT switch on the Speaker/Microphone, just as you would on the main transceiver's body.

**Note:** Save the original plastic cap and its mounting screws. They should be re-installed when not using the Speaker/Microphone.

## Display Icons & Indicators (VX-180 Only)



### VERTEX STANDARD CO., LTD.

4-8-8 Nakameguro, Meguro-Ku, Tokyo 153-8644, Japan

### VERTEX STANDARD

US Headquarters

10900 Walker Street, Cypress, CA 90630, U.S.A.

### YAESU UK LTD.

Unit 12, Sun Valley Business Park, Winnall Close Winchester, Hampshire, SO23 0LB, U.K.

### VERTEX STANDARD HK LTD.

Unit 5, 20/F., Seaview Centre, 139-141 Hoi Bun Road, Kwun Tong, Kowloon, Hong Kong

### VERTEX STANDARD (AUSTRALIA) PTY., LTD.

Normanby Business Park, Unit 14/45 Normanby Road Notting Hill 3168, Victoria, Australia

## Key Functions

The **VX-180** provides programmable **[A]**, **[B]**, and **[C]** function keys, and both the **VX-160** and **VX-180** provide programmable **MONITOR** keys. These "Soft" keys functions can be customized (set to other functions), via programming by your **VERTEX STANDARD** dealer, to meet your communications/network requirements. Some features may require the purchase and installation of optional internal accessories. The possible **Soft** key programming features are illustrated below, and their functions are explained in the next chapter. For further details, contact your **VERTEX STANDARD** dealer. For future reference, check the box next to each function that has been assigned to the **Soft** key on your particular radio, and keep it handy.

Function	Soft Key			
	[A]	[B]	[C]	MONITOR key
None				
Monitor				
Low Power				
Lock*				
Lamp*				
Channel Up*				
Channel Down*				
Scan				
Follow-me Scan				
Dual Watch				
Talk Around				
Add/Del*				
Call/Reset				
Speed Dial				
TX Save Off				

\* VX-180 only

This device complies with Part 15 of the FCC rules. Operation is subject to the condition that this device does not cause harmful interference.

## Description of Operating Functions

### Monitor

Press the assigned **Soft** key momentarily to override (disable) the Tone squelch.

Background noise or incoming signals will now be heard whether or not a matching tone is present on the signal.

Press and hold in the assigned **Soft** key for more than 1 seconds to override both the Noise and Tone squelch. Again press and hold in the assigned **Soft** key for more than 1 seconds (or press the assigned **Soft** key twice) to resume normal (quiet) Noise and Tone squelch action.

### Low Power

Press the assigned **Soft** key to set the radio's transmitter to the "Low Power" mode, thus extending battery life. Press the assigned **Soft** key again to return to "High Power" operation when in difficult terrain.

### Lock

Press the assigned **Soft** key to lock the **Soft** keys (except **Lock** and **Monitor** key); thus, the [A], [B], [C], and **MONITOR** keys can be disabled to prevent radio settings from being disturbed.

### Lamp

Press the assigned **Soft** key to illuminate the LCD for five seconds.

### Channel Up

Press the assigned **Soft** key to switch to a higher operating channel number.

### Channel Down

Press the assigned **Soft** key to switch to a lower operating channel number.

### Scan

The Scanning feature is used to monitor multiple channels programmed into the transceiver. While scanning, the radio will check each channel for the presence of a signal, and will stop on a channel if a signal is present.

To activate scanning:

Press the assigned **Soft** key.

The scanner will search the channels, looking for active ones; it will pause each time it finds a channel on which someone is speaking.

To stop scanning:

Press the assigned **Soft** key.

Operation will revert to the channel to which the CH knob is set.

### Follow-Me Scan

"Follow-Me" Scan feature checks a *User-assigned* Priority Channel regularly as you scan the other channels. Thus, if only Channels 1, 3, and 5 (of the 8 available channels) are designated for "Scanning," the user may nonetheless assign Channel as the "User-assigned" Priority Channel via the "Follow-Me" feature. Press the assigned **Soft** key to activate "Follow-Me" scanning, then turn the CH selector knob to the channel which you want to designate as the "User-Assigned Priority Channel". When the scanner stops on an "active" channel, the User-assigned Priority Channel will automatically be checked every few seconds.

### Dual Watch

The Dual Watch feature is similar to the Scan feature, except that only two channels are monitored: the current operating channel, and the "Priority" channel.

To activate Dual Watch:

Press the assigned **Soft** key.

The scanner will search the two channels; it will pause each time it finds a channel on which someone is speaking.

To stop Dual Watch:

Press the assigned **Soft** key.

Operation will revert to the channel to which the CH knob is set.

### Talk Around

Press the assigned **Soft** to activate the Talk Around feature when you are operating on duplex channel systems (separate receive and transmit frequencies, utilizing a "repeater" station). The Talk Around feature allows you to bypass the repeater station and talk directly to a station that is nearby. This feature has no effect when you are operating on "Simplex" channels, where the receive and transmit frequencies are already the same.

Note that your dealer may have made provision for "Talk Around" channels by programming "repeater" and "Talk Around" frequencies on two adjacent channels. If so, the key may be used for one of the other Pre-Programmed Functions.

### Add/Del

The Add/Del feature allows the user to arrange a custom Scan. Press the assigned **Soft** key to delete/restore the current channel to/from your scanning list.

When you delete a current channel, "**SKIP**" will appear on the LCD after pressing the **Soft** key. When you restore a current channel, "**SKIP**" indicator on the LCD will turn off.

### Call/Reset

When the 2-tone selective calling unit is installed, press the assigned **Soft** key to silence the receiver and reset for another call, when a communication is finished.

### Speed Dial

Your Dealer may have pre-programmed Auto-Dial telephone number memories into your radio.

To dial a number, just press the Dealer-assigned **Soft** key for Speed Dialing. The DTMF tones sent during the dialing sequence will be heard in the speaker.

### TX Save Off

Press the assigned **Soft** key to disable the Transmit Battery Saver, if you are operating in a location where high power is almost always needed.

The Transmit Battery Saver helps extend battery life by reducing transmit power when a very strong signal from an apparently nearby station is being received. Under some circumstances, though, your hand-held radio may not be heard well at the other end of the communication path, and high power may be necessary at all times.

## Accessories & Options

<b>FNB-83</b>	7.2 V 1400 mAh Ni-MH Battery
<b>FNB-V94</b>	7.2 V 1800 mAh Ni-MH Battery
<b>FNB-V67LI</b>	7.4 V 2000 mAh Lithium-Ion Battery
<b>FBA-25A</b>	Alkaline Battery Case
<b>VAC-10</b>	Desktop Charger (for FNB-83/FNB-V94)
<b>VAC-810</b>	Desktop Rapid Charger (for FNB-V67LI)
<b>VAC-6010</b>	6-unit Multi Charger (for FNB-83/FNB-V94)
<b>VAC-6810</b>	6-unit Multi Charger (for FNB-V67LI)
<b>MH-45<sup>B4B</sup></b>	Speaker/Microphone
<b>MH-360S</b>	Speaker/Microphone (Miniature Type)
<b>MH-450S</b>	Speaker/Microphone (Small Type)
<b>MH-37<sup>A4B</sup></b>	Earpiece Microphone
<b>VH-110S</b>	Over the Head, Heavy Duty Headset
<b>VH-115S</b>	Lightweight headset w/Boom
<b>VH-120S</b>	3-Wire Earpiece, Mic, Palm PTT Switch
<b>VH-130S</b>	2-Wire Earpiece, Mic, Palm PTT Combo
<b>VH-215S</b>	Over-the-head Single Muff Headset
<b>VC-25</b>	VOX Headset
<b>VCM-1</b>	Mobile Mounting Bracket (for VAC-810)
<b>DCM-1</b>	Desktop Charger Bracket (for VAC-10)
<b>VCM-3</b>	Mobile Mounting Bracket (for VAC-10)
<b>LCC-160/S</b>	Leather Case (for VX-160)
<b>LCC-180/S</b>	Leather Case (for VX-180)
<b>ATU-6A</b>	Rubber Antenna 400-430 MHz
<b>ATU-6D</b>	Rubber Antenna 450-490 MHz
<b>ATV-6XL</b>	Rubber Antenna 134-174 MHz (Untuned)
<b>ATV-8A</b>	Rubber Antenna 134-151 MHz
<b>ATV-8B</b>	Rubber Antenna 150-163 MHz
<b>ATV-8C</b>	Rubber Antenna 161-174 MHz